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# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
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DOGM  
MINERALS PROGRAM  
FILE COPY

August 15, 1989

TO: File

FROM: Scott Johnson, Reclamation Engineer *SWJ*

RE: Underground Inspection, White River Shale Project,  
M/047/017, Uintah County, Utah

On August 10, 1989, I met with the following people to review the underground maintenance of the White River Shale Mine:

Pat Spurgin, State Lands  
Mike Lekas, Probable Lessee  
Howard Cleavinger, Bureau of Land Management  
Lorvin Cottam, Volunteer for Division of Oil, Gas & Mining  
Ken Hutchings, Bureau of Land Management, Maintenance

The purpose of the visit was to familiarize Pat Spurgin and Mike Lekas with the underground maintenance requirements of the mine. Lorvin Cottam, an MSHA certified electrician, was present to answer any questions concerning the electrical or mechanical needs of the operation.

The following maintenance requirements and suggestions are based on this visit and previous visits to the mine site:

## Power Consumption

As discussed in a June 19, 1989 memo, I recommend the State work with Moon Lake Electrical Association and convert the present Large Power Primary Service (LPPS) rate, which currently costs the operator approximately \$30,000 per year, to the Large Power Utah Service (LPUS) rate, which would reduce the annual cost to \$20,000 or less.

It is important to note that the \$20,000 figure is based on historic kilowatt usage. It is possible that the kilowatt usage could be reduced well below the present usage. For instance, the ventilation fan may currently operate more often than necessary.



### Ventilation Requirements

The present operator has historically operated the fan for unknown periods of time. A ventilation survey is recommended to determine if and when the fan should be operated. Additionally, by increasing the flow of natural ventilation, the pump usage could be decreased by approximately 15%. This will be accomplished by the increased air flow carrying out this moisture as humidity.

The operator currently uses a 3/4 ton diesel pickup to access the underground workings. A smaller Isuzu diesel pickup is also available at the minesite. Whether the operator uses forced air or natural ventilation, MSHA regulations require a minimum 17,000 cfm to flow past the 3/4 ton truck at all times underground; 9,000 cfm is required for the Isuzu truck. It is questionable whether the present operator maintains an adequate flow of air over the vehicle. I believe a ventilation survey will show that, with proper regulation at the hinged fan doors, these minimum air velocities can be easily obtained.

### Fresh Water Pumping Requirements

The birds nest aquifer generates a flow ranging from 1 to 4 gpm, depending on the season. Although an additional 0.5 gpm could be carried out with an increase in the ventilation air, the present pumping practice is unavoidable. This is one aspect of the mine maintenance that will not change significantly.

### Oil Seep Pumping Requirements

The current operator pumps the oil out of the mine 4 or 5 times a year. This oil is pumped with an air pump to the Gardner-Denver pump 100 vertical feet, where it is then pumped to the storage tank on the surface. This oil is transported to Vernal by truck for disposal. No known studies on the marketability of this oil has been conducted.

This oil would eventually contaminate the aquifer if left to accumulate. As with the fresh water pumping, the pumping of the oil cannot be avoided. However, the frequency of pumping can be reduced by allowing the oil to build up in the decline. This build up could easily reach several hundred thousand gallons before the ventilation would be affected. Therefore, pumping of the oil could be done on an annual basis without affecting the quality of the fresh water or the ventilation.



Page 3  
White River Shale Project  
M/047/017  
August 15, 1989

### Maintenance Requirements

The mine is wired with a Conspec mine monitoring system. Although the system was operational when the present operator acquired the site, it has not been used. The following monitoring equipment is installed:

- 1 - Conspec Centurion 180 System
- 3 - Conspec CO Sensors/Accessors
- 4 - Conspec CH4 Sensors/Accessors
- 2 - Conspec H2S Sensors/Accessors
- 1 - Conspec "Red Out" Station
- 2 - Conspec "Blue Out" Stations

Carl Nyman of Western Engineering in Murray, Utah installed the system for the White River Shale Corporation in 1985. The following equipment is available on the market for the system and will have to be purchased if the operator decides to incorporate them into the system:

- 1 - Continuous Level Indicator, \$1,800
- 1 - Air Velocity Indicator, \$3,200

These devices will allow the operator to monitor the fresh water sump level and underground air flow from the surface terminal. These devices will be mainly for convenience to determine if the Denver-Gardner pump is operational and if the air velocity in the mine is optimal. It will allow the underground inspection of the mine to be kept at a minimum.

Lorvin Cottam inspected the Conspec stations at the base of the shaft and determined they were in good mechanical shape. The rubber seal has kept the inside digital workings dry and clean. He also stated the installation of additional indicators could be done fairly easily. I recommend the operator reactivate the monitoring system and give consideration for the installation of the mentioned upgrades.

jb  
cc: Pat Spurgin, State Lands  
John Blake, State Lands  
Mike Lekas  
Lowell Braxton  
MN17/55-57